

Claim Rejections – 35 USC § 102

Claims 1-3 and 6-11 are rejected under 35 USC § 102(b), as being anticipated by U.S. Patent No. 7,292,527 to Zhou et al (hereinafter “Zhou”) The claims should be considered patentable over Zhou. Of these claims, claims 1, 10 and 11 are independent claims and claims 2-3 and 6-9 depend from claim 1.

In the Office action it is stated that Zhou discloses:

“estimating frequency error at the receiver based on received symbols and a metric indicative of detected pilot power (col. 5, lines 47-56, col. 6, lines ...13-27)”.

This is in error. The cited portions of Zhou state, at col. 5, lines 47-56 and col. 6, lines 13-27, respectively:

The frequency error detector 100 is configured for measuring frequency error (Freq. Error) ***based on determining phase differences between pilot tones*** over a period of time. In particular, the disclosed embodiment compares the pilot tones 114 within a prescribed group (N) of consecutive OFDM symbols 112 in order to derive an accurate frequency error estimation. As described above, each OFDM symbol 112 transmitted according to IEEE 802.11a protocol includes fifty-two (52) tones 116, which includes four (4) pilot tones 114a, 114b, 114c, and 114d.

....

Hence, a comparison between symbols of the subgroups 118a and 118b that share the same corresponding subgroup position enables a uniform time-delayed evaluation between the pilot tones, the uniform time delay being N/2.

According to the disclosed embodiment, the complex representations of the pilot tones 114 (114a, 114b, 114c, 114d) (i.e., constellation values) are compared between N/2 OFDM symbols by multiplying the pilot tone 114 of a symbol from the second subgroup 118b with the complex conjugate (represented by “*”) of the pilot from the corresponding symbol subgroup position of the first subgroup 118a, ***resulting in a phase difference***. In particular, the complex conjugate generator 104 outputs the complex conjugates of the pilot tones 114 of the first subgroup 118a of the consecutive symbols to the multipliers 106.

(Emphasis added)

A word search for “power” in the on-line version html version of Zhou shows the word is not even used in the patent. As seen from the emphasized portion above, Zhou claims to measure frequency error “*based on determining phase differences between pilot tones*” and not on the basis of “*a metric indicative of detected pilot power*” as recited in claims 1, 10 and 11.

Claim 1 further recites (and independent claims 10 and 11 similarly recite) “performing frame synchronization **based on the metric and the frequency-corrected pilot symbols**”. The Office action states Zhou teaches this at col. 5, lines 4-11, quoted below:

In addition to the coarse and fine frequency offset estimator 58, the phasor circuit 60 and the channel estimator 70, the receiver module 50 also includes a timing synchronization module 72, a frequency tracking block 74, a channel tracking block 76, and a timing correction block 78 for controlling signal conditioning to ensure the received signal samples are decoded properly to accurately recover the data symbols.

At best, Zhou may state that some form of frame synchronization occurs, but the basis upon which that frame synchronization occurs is not stated, unlike the claims which recite the base for that synchronization – “**the metric and the frequency-corrected pilot symbols.**” Thus, the cited language of the patent does not support the statement that this anticipates the claims.

Claims 2-3 and 6-9 depend from claim 1 and thus the same reason for allowability as discussed relative to claims 1, 10, and 11 also apply to those claims.

For at least these reasons, Applicants respectfully request reconsideration and allowance of claims 1-11 and reconfirmation of the allowability of claims 12-32.

Allowable Subject Matter

The allowability of claims 12-32 was previously noted. Claims 4-5 are objected to as being dependent upon a base claim, but allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. These claims have not been amended because Applicants believe the independent claims on which claims 4-5 are allowable over the cited references for the reasons given above.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,
Rajiv Vijayan
Alok Kumar Gupta
Raghuraman Krishnamoorthi
Applicants

By their attorney

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/Stanton Braden/
Stanton C. Braden., Reg. No. 32,556
Telephone: 858.651.1934
Email: sbraden@qualcomm.com

QUALCOMM Incorporated
Attn: Patent Department
5775 Morehouse Drive
San Diego, California 92121-1714
Telephone: (858) 658-5787
Facsimile: (858) 658-2502